概念整理：

1Feature of Mobile Computers:

portability, small size, wireless communication, touch interface

2The four layers of Android architecture (from bot to top):

Linux Kernel, System Layer (Libraries, Runtime), Application Framework, Application

3Linux Kernel provides core system services such as:

Memory management, process management, network stack, security and driver model.

4Three types of application-specific computers:

carputers, portable data terminal computers and wearable computers.

5The activities of reengineering generally include:

inventory analysis, reverse engineering, forward engineering, documentation restructuring, data restructuring, code restructuring.

6lifecycle of software:

problem definition, development, deployment and maintenance, retirement.

7phase of software development:

planning phase, analysis phase, design phase, implementation phase实施, maintenance phase.

8The collection of software processes that are performed when software is being built:

构建软件时执行的软件过程集合

activities, actions, tasks.

9a series of activities in the planning phase:

Assemble the project team, justify project, choose development methodology

10a series of activities in the analysis phase:

Study the current system, determine system requirements, write requirements report.

11key objectives目标 of reverse engineering:

Cope with complexity, Generate alternate views, Recover lost information, Detect side effects, Synthesize higher abstractions, Facilitate reuse.

12Three main steps converting a legacy system to a modern database technology:

Database schema conversion, Data conversion, Program conversion.

13Features of main memory database:

high throughput rate, Excellent parallel processing power, low access delay, high hardware dependencies.

14Three periods did MMDB go through

MMDB rudiment, research and development for MMDB, products growth

15ACID（数据库执行四基本要素）:

Atomicity原子性, consistency一致性, isolation独立性, durability持久性.

16Options belong to recovery tasks:

Automatic uses checkpoint, redo log, archive/restore, fault tolerant.

17differences between MMDB and DRDB:

access time, data storage, buffer management, index structure, concurrency control并发控制, query optimization.

18Feature of Ethernet:

Shared, Distributed and Collaborative, Insecure, Performance degrades.

19Three most common types of attacks in broad categories:

Password attacks, Phishing attacks, Malware attacks.

20long-term goal of AI research:

social intelligence, creativity, general intelligence

21Three types of machine learning:

unsupervised learning, supervised learning, reinforcement learning.

22cores or goals of AI research/central problems of AI research:

reasoning and knowledge, planning and learning, natural language process (communication), perception感知 and the ability to move and manipulate objects.

23ways to obtain these objectives of the goal of AI research:

Statistical统计 methods, computational intelligence, traditional symbolic AI

24large number of tools used in AI area:

search, mathematical optimization, logic, methods based on probability概率 and economics.

25The AI field is interdisciplinary跨学科:

computer science and linguistics, mathematics and psychology心理学, philosophy and neuroscience, other specialized fields such as artificial psychology.

26In 2001,data growth challenges and opportunities as being three-dimensional:

volume, velocity, variety

27four dimensions of big data:

volume, velocity, variety, veracity(2012)

28Jim Gray's four paradigms:

experimental science, theoretical science, computational science, data-intensive science.

29challenges of big data:

volume, velocity, variety, veracity, data reduction, querying and indexing, analysis and mining.

30feasible and effective techniques for data reduction are:

sampling, aggregation, dimension reduction

31two categories of Big data:

data from the physical world, data from human activities.

32benefits of mobile internet:

convenience and portability, timeliness and accuracy, tactile触觉 sense and directionality.

33limitations of mobile internet:

range and bandwidth, power consumption, transmission interferences干扰, potential health hazards, Human interface with devices.

34mobile Internet standards:

OMA Standards, W3C Standards, Standardization of Chinese Mobile Internet.

35The CCSA has worked in the fields of:

WAP\java\mobile browse, multimedia message service\mobile Email, push-to-talk\real-time status\XDM\instant messaging, Secure user plane location\and mobile broadcast.

36mobile Internet business patterns:

Mobile Social, Mobile Advertising, Mobile Location-based Services, Mobile Search.

37Prospects前景 for mobile Internet applications:

Market reshuffle洗牌 produces new winners, from fun to habits: Changing business drivers.

38the four characteristics of mobile internet:

mobility, individuality, privacy, fusion

39three elements of mobile internet:

business, terminal, network.

40WIMAX three levels of service (high to low):

CBR, CIR, BE

41features of the Internet of Things:

Miniaturization小型化, low-power dissipation耗散, big density,

42resource constraint of WSN:

limited amount of energy, short communication range, low bandwidth, limited processing and storage in each node

43each sensor network node has typically several parts:

a radio transceiver, microcontroller, an electronic circuit for interfacing with the sensors, an energy source.

44main characteristic of embedded system:

User interface, processor, ready-made computer boards, reliability